

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

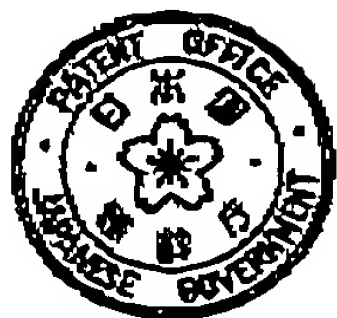
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**



(19)

(11) Publication number: **11264072 A**

Gen. rated Document.

**PATENT ABSTRACTS OF JAPAN**(21) Application number: **10053623**(51) Intl. Cl.: **C23C 16/52 C23C 16/44 C23C 16/46 G01B 11/06 H01L 21/205**(22) Application date: **05.03.98**

(30) Priority:

(43) Date of application publication: **28.09.99**

(84) Designated contracting states:

(71) Applicant: **INTERNATL BUSINESS MACH CORP <IBM>**(72) Inventor: **TAKEUCHI MASAYUKI  
NAKAGAWA SHINYA**

(74) Representative:

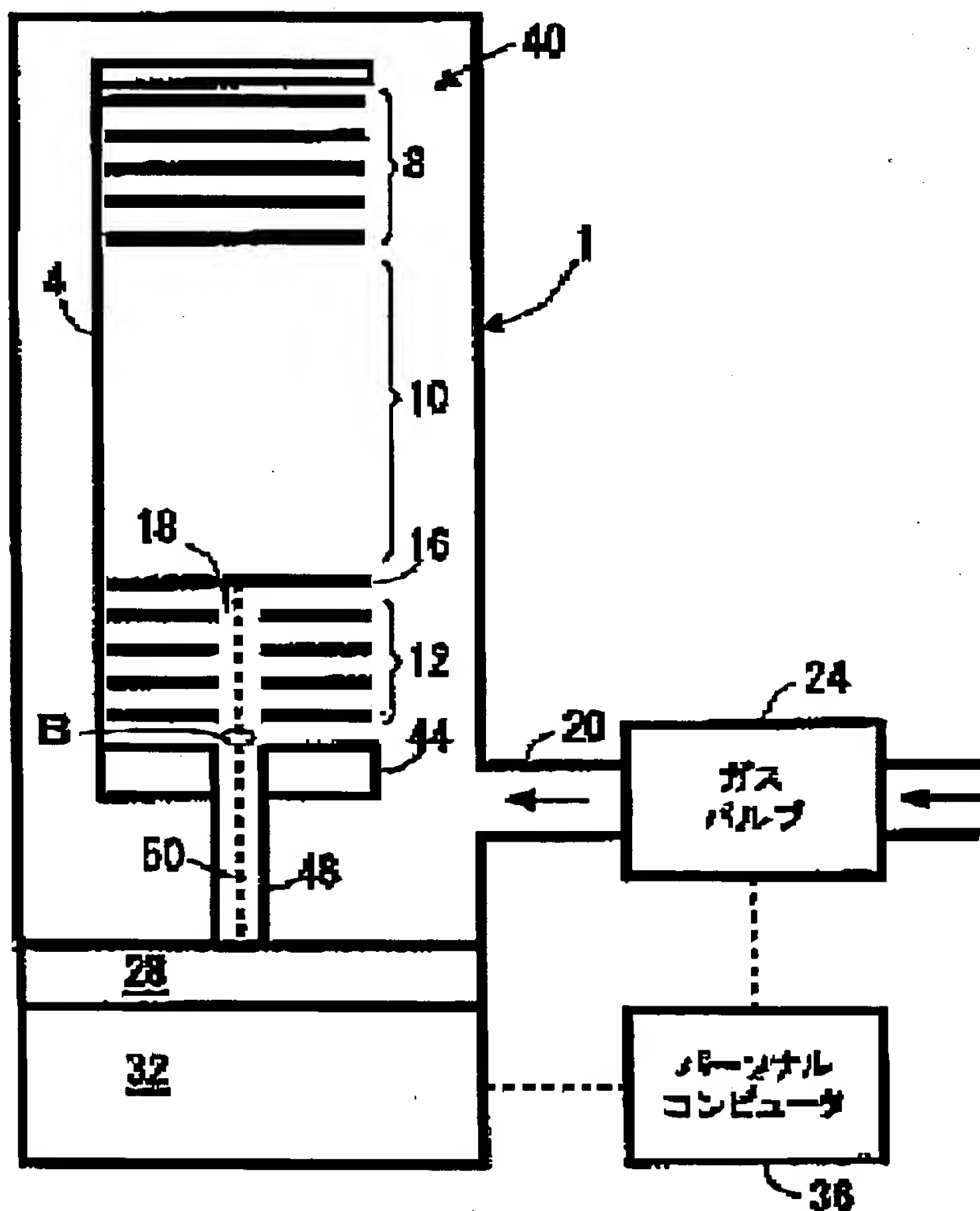
**(54) FILM DEPOSITION  
DEVICE FOR  
MEASURING FILM  
THICKNESS IN-SITU IN  
FILM FORMING  
PROCESS AND ITS  
METHOD**

(57) Abstract:

**PROBLEM TO BE SOLVED:**

To provide a film deposition device correctly measuring the change in film thickness by laser beam in-situ in the process of a film forming process of a wafer by a CVD method without being influenced by a deposited film at the inside of a quartz furnace.

**SOLUTION:** The cap part 28 of a quartz furnace 1 in a CVD device is provided with a light guide, a laser beam 50 is introduced into the quartz furnace through the light guide, and a wafer is irradiated with the laser



beam. Reflected laser beam from the wafer is taken out to the outside of the quartz furnace through the same light guide, and the change of the film thickness is measured based on the quantity of the reflected laser beam. In this way, the laser beam can be transmitted without passing through the wall of the quartz furnace, and the measurement of film thickness can correctly be executed without being influenced by deposits on the wall face of the quartz furnace.

COPYRIGHT: (C)1999,JPO